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**APPENDIX A6**

**Construction Inspection Report  
South Plant Transmission Pipeline  
Phase III**

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**Construction Inspection Report  
for  
Newmark OU Remedial Action  
Newmark Ground Water Contamination Superfund Site  
South Plant Transmission Pipeline  
Phase III**

**DRAFT**

**Prepared for:**

**Contract No. 68-W-98-225 / WA No. 015-RARA-09J5  
U.S. Environmental Protection Agency  
Region IX  
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## 1.0 INTRODUCTION

This report is a summary of field inspections performed during construction of the Newmark South Plant Transmission Pipeline, Phase III.

The pipeline construction inspection was performed by URS Group, Inc. (URSG) for the United States Environmental Protection Agency (USEPA). URSG performed the inspection under contract number 68-W9-0054 and work assignment number 54-47-9NJ5.

### 1.1 JOB DESCRIPTION

The Newmark Groundwater Contamination Superfund Site, North and South Plants, consists of two separate granular activated carbon (GAC) water treatment plants. The plants remove organic contaminants from groundwater which is pumped to the plants through a system of pipelines. The North Plant treats water that is pumped from the source of contamination, and the South Plant treats water that is at the leading edge of the contaminated groundwater plume.

Trautwein Construction, Inc. (Trautwein) was procured and subcontracted by the City of San Bernardino Municipal Water District (SBMWD) to complete the construction of the South Plant Transmission Pipeline.

The South Plant is located on Waterman Avenue, one block north of the Route 30 Freeway. It includes sixteen 20,000 pound GAC vessels, with a total design flow rate of 5,610 gpm. The vessels operate in eight serial pairs in parallel.

The South Plant Transmission Pipeline connects a series of five extraction wells located on 11<sup>th</sup> Street to the South Plant.

The scope of work included installation of 9,112 feet of 24-inch ductile iron pipe (DIP). This included the following sections of the Phase III pipeline:

- North of 21<sup>st</sup> Street on Mountain View Avenue from Station 60+63 to the south side of the Mountain View Overcrossing.
- North side of the Mountain View Overcrossing on Mountain View Avenue to the intersection of Marshall Boulevard.
- East on Marshall Boulevard to the intersection of Leroy Street.
- South on Leroy Street to the Waterman reservoir.
- East at the Waterman reservoir and tied into the South Plant raw-water line.

The Mountain View Overcrossing was performed under a separate contract.

## **2.0 CONSTRUCTION SUMMARY**

### **2.1 TASKS COMPLETED**

#### **January 1998**

- Trautwein commenced installation of the 24-inch DIP on January 20, on Mountain View Avenue at Station 60+63. Trautwein reached the south side Route 30 Freeway on January 29.

#### **February 1998**

- Trautwein resumed work north of the Route 30 Freeway along Mountain View on February 2. Trautwein turned east onto Marshall on February 9.
- After installing pipe under Marshall Boulevard, Trautwein turned south onto Leroy street on February 26.

#### **March 1998**

- Trautwein turned east to follow along the south side of the Waterman reservoir on March 6. After installing pipe around the reservoir they finished with a 24" x 24" tee blind flanged on the two open ends on March 10.
- Performed a hydrostatic test on March 17 of the pipeline from 21<sup>st</sup> Street to the Route 30 overcrossing.
- Concrete paving over the trench was performed on Mountain View Avenue on March 19. Asphalt paving over the trench was performed on March 30. Trautwein's subcontractors paved over the trench patch from 21<sup>st</sup> Street to the 90 degree elbow into the Waterman Reservoir on Leroy Street.
- Performed a hydrostatic test of the pipeline on March 19 from north of Route 30 to the Waterman Reservoir tie-in. Trautwein found a leak in an 8-inch DIP stab joint for a blow-off at station 15+50 along Marshall Avenue. They fixed it with a stab joint bell clamp. The next hydrostatic test on March 23 passed.

#### **June 1998**

- Hydro-seed and sprinkler system installed at Waterman on June 15.
- Trautwein completed construction of the South Pipeline on June 15.

## **2.2 PROBLEMS ENCOUNTERED AND RESPECTIVE SOLUTIONS**

- A sewer line was encountered during installation of the 24-inch DIP at station 108+00 on January 30. Trautwein had to reroute from the south bound side of Mountain View Avenue to the north bound side of Mountain View Avenue.
- A high point in the line required the installation of a combination air vacuum/release valve to release accumulated air.
- Several Gas Company (GC) gas lines were required to be relocated, and GC did not relocate the lines before Trautwein reached the area where the lines were interfering with the route of the 24-inch DIP. To expedite construction of the 24-inch DIP, Trautwein assisted GC with soil removal and compaction. These events occurred on February 18, 19, 20, and 25.
- During pipeline installation around the Waterman Reservoir, Trautwein encountered an underground sprinkler system. It was not feasible to lay pipe without disturbing the system since the pipeline trench was in the same location as the irrigation piping. The city engineer advised Trautwein to continue to install the DIP, and not work on preserving the irrigation system. It was decided to have a landscape firm install an entirely new irrigation system. The new system installation was coordinated by Trautwein.

## **2.3 QUALITY ASSURANCE TEST SUMMARY**

### **2.3.1 Compaction Testing**

Soil compaction tests were taken by CHJ Inc. (CHJ), a certified independent testing lab. Tests were taken of trench backfill, sub-grade, and base material. All of the compaction tests were taken with a nuclear density gauge, using the Nuclear Density Gauge method per ASTM standard D 2922.

### **2.3.2 Hydrostatic Testing and Disinfection**

The hydrostatic tests were performed on newly installed pipelines according to The City of San Bernardino Municipal Water Department (SBMWD) Specification No. 1292, Section 6-1.1. All newly installed pipe was pressure tested at 225 pounds per inch continuously for a period of two hours. Water leakage was measured by determining the quantity of water required to maintain test pressure. Any water leakage was not to exceed 10 gallons per inch diameter per mile of pipe per 24 hours under these testing conditions. Pipe installation would not be acceptable until all leakages were stopped or until the leakage for the section of line tested was less than the rate of leakage specified. All pipelines tested passed the hydrostatic tests.

All newly installed pipe was disinfected. Chlorine was introduced into the pipeline filled with water via a water injector. The chlorine concentration was to be between 50 and 80 parts per million (ppm). This mixture was retained in the pipe for 24 hours. After this time, the chlorine residual was to be at least 25 ppm.

Following chlorination, all water in the pipeline was flushed out until the replacement water showed the absence of chlorine. Following flushing, the pipe was allowed to set an additional 24 hours.

## **2.4 AGENCY INVOLVEMENT**

The following agencies were involved in the construction of the South Plant Transmission Pipeline, Phase II:

1. SBMWD performed oversight of inspection of the pipeline, purchasing of construction materials, and approving the compaction, hydrostatic, and concrete testing.
2. The City of San Bernardino Public Works Department was responsible for road inspection.

## **2.5 CHANGE ORDER SUMMARY**

Trautwein was contracted by SBMWD; therefore, change orders were managed by SBMWD.

## **2.6 PUNCH LIST ITEMS**

Appendix C contains the punch list compiled by SBMWD. Trautwein successfully completed the construction contract by completing the punch list items.

## **2.7 CONCLUSION**

The scope of work associated with the South Plant Transmission Pipeline, Phase II, was completed according to the plans and specifications. The pipeline was ready for use pending tie-in's to the extraction wells and to the South Plant by SBMWD.

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**Appendix A**  
**Construction Inspection Report**  
**South Plant Transmission Pipeline**  
**Phase III**  
**Compaction Test Results**

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**Compaction test results are posted in  
Appendix A 5 in Appendix A**

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**Appendix B**  
**Construction Inspection Report**  
**South Plant Transmission Pipeline**  
**Phase III**  
**Change Order Request Log**

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**Change Order Request Log are posted in  
Appendix A 5 in Appendix B**

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**Appendix C**  
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**Phase III**  
**Punch List**

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### **Punch List**

1. Remove 24" DIP and short pieces of pipe and breakage next to lot west of 215 W. 23rd.
2. Repair sprinkler head or fill in low spot 27<sup>th</sup> and Mountain View in median.
3. Re strip.
4. Remove 24" DIP from park area on Le Roy.
5. Five lengths TJ and MJ pipe at LeRay Plant.
6. Five lengths TJ pipe at LeRay Plant.
7. Three lengths TJ pipe at 23<sup>rd</sup> Street.
8. Six 32" high traffic cones at Le Roy plant.
9. Two shoring shields at Waterman plant.
10. One shoring shield at 23<sup>rd</sup> Street.
11. 4" drain lines to be replaced at Waterman reservoir (south side)
12. Sprinkler system for Waterman reservoir.
13. More Gas Co. data on delays, Marshall Blvd. and Le Roy.
14. All certified payroll on all work letters stating paid all subs.
15. Cost to all MBE/WBE subs listed on 81D.
16. Acceptance from parks that sprinklers in Mountain View are acceptable.